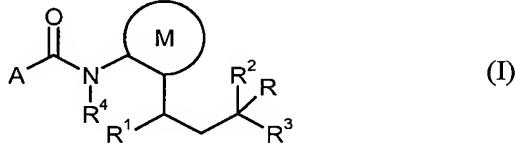


**Patent Claims**

## 1. Haloalkyl carboxamides of the formula (I)



5 in which

R stands for hydrogen or halogen,

R<sup>1</sup> stands for hydrogen or methyl,

R<sup>2</sup> stands for methyl, ethyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 9 fluorine, chlorine and/or bromine atoms,

10 R<sup>3</sup> stands for halogen or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 9 fluorine, chlorine and/or bromine atoms,

R<sup>4</sup> stands for hydrogen, C<sub>1</sub>-C<sub>8</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkylsulfinyl, C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl; C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>4</sub> haloalkylthio, C<sub>1</sub>-C<sub>4</sub> haloalkylsulfinyl, C<sub>1</sub>-C<sub>4</sub> haloalkylsulfonyl, halo-C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl with 1 to 9 fluorine, chlorine and/or bromine atoms in each case; formyl, formyl-C<sub>1</sub>-C<sub>3</sub>-alkyl, (C<sub>1</sub>-C<sub>3</sub> alkyl)carbonyl-C<sub>1</sub>-C<sub>3</sub>-alkyl, (C<sub>1</sub>-C<sub>3</sub> alkoxy)carbonyl-C<sub>1</sub>-C<sub>3</sub>-alkyl; halo-(C<sub>1</sub>-C<sub>3</sub> alkyl)carbonyl-C<sub>1</sub>-C<sub>3</sub>-alkyl, halo-(C<sub>1</sub>-C<sub>3</sub> alkoxy)carbonyl-C<sub>1</sub>-C<sub>3</sub>-alkyl with 1 to 13 fluorine, chlorine and/or bromine atoms in each case;

15 (C<sub>1</sub>-C<sub>8</sub> alkyl)carbonyl, (C<sub>1</sub>-C<sub>8</sub> alkoxy)carbonyl, (C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl)carbonyl, (C<sub>3</sub>-C<sub>8</sub> cycloalkyl)carbonyl; (C<sub>1</sub>-C<sub>6</sub> haloalkyl)carbonyl, (C<sub>1</sub>-C<sub>6</sub> haloalkoxy)carbonyl, (halo-C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl)carbonyl, (C<sub>3</sub>-C<sub>8</sub> halocycloalkyl)carbonyl with 1 to 9 fluorine, chlorine and/or bromine atoms in each case; or -C(=O)C(=O)R<sup>5</sup>, -CONR<sup>6</sup>R<sup>7</sup> or -CH<sub>2</sub>NR<sup>8</sup>R<sup>9</sup>,

20 R<sup>5</sup> stands for hydrogen, C<sub>1</sub>-C<sub>8</sub> alkyl, C<sub>1</sub>-C<sub>8</sub> alkoxy, C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl; C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub> haloalkoxy, halo-C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl with 1 to 9 fluorine, chlorine and/or bromine atoms in each case,

25 R<sup>6</sup> and R<sup>7</sup> stand independently of one another in each case for hydrogen, C<sub>1</sub>-C<sub>8</sub> alkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl; C<sub>1</sub>-C<sub>8</sub> haloalkyl, halo-C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl with 1 to 9 fluorine, chlorine and/or bromine atoms in each case,

30 R<sup>6</sup> and R<sup>7</sup>, moreover, form a substituted, saturated heterocycle with 5 to 8 ring atoms together with the nitrogen atom to which they are bound, with single or multiple, the same or various substitution by halogen or C<sub>1</sub>-C<sub>4</sub> alkyl, whereby the

heterocycle can contain 1 or 2 additional, non-adjacent hetero atoms constituted by oxygen, sulfur or NR<sup>10</sup>,

R<sup>8</sup> and R<sup>9</sup> stand independently of one another for hydrogen, C<sub>1</sub>-C<sub>8</sub>-alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl; C<sub>1</sub>-C<sub>8</sub> haloalkyl, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl with 1 to 9 fluorine, chlorine and/or bromine atoms in each case,

R<sup>8</sup> and R<sup>9</sup>, moreover, form a substituted, saturated heterocycle with 5 to 8 ring atoms together with the nitrogen atom to which they are bound, with single or multiple, the same or various substitution by halogen or C<sub>1</sub>-C<sub>4</sub> alkyl, whereby the heterocycle can contain 1 or 2 additional, non-adjacent hetero atoms constituted by oxygen, sulfur or NR<sup>10</sup>,

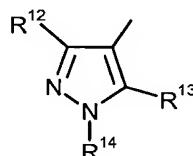
R<sup>10</sup> stands for hydrogen or C<sub>1</sub>-C<sub>6</sub> alkyl,

M stands in each case for a phenyl, pyridine or pyrimidine, pyridazine or pyrazine ring with a single substitution by R<sup>11</sup> or for a thiazole ring substituted by R<sup>11-A</sup>,

R<sup>11</sup> stands for hydrogen, fluorine, chlorine, methyl, isopropyl, methylthio or trifluoromethyl,

R<sup>11-A</sup> stands for hydrogen, methyl, methylthio or trifluoromethyl,

A stands for the group of the formula (A1)



(A1), in which

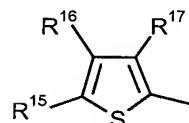
R<sup>12</sup> stands for hydrogen, cyano, halogen, nitro, C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>1</sub>-C<sub>4</sub> alkylthio, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>1</sub>-C<sub>4</sub> haloalkyl, C<sub>1</sub>-C<sub>4</sub> haloalkoxy or C<sub>1</sub>-C<sub>4</sub> haloalkylthio, in each case with 1 to 5 halogen atoms, aminocarbonyl or aminocarbonyl-C<sub>1</sub>-C<sub>4</sub>-alkyl,

R<sup>13</sup> stands for hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>1</sub>-C<sub>4</sub> alkoxy or C<sub>1</sub>-C<sub>4</sub> alkylthio,

R<sup>14</sup> stands for hydrogen, C<sub>1</sub>-C<sub>4</sub> alkyl, hydroxy-C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl, C<sub>1</sub>-C<sub>4</sub>-alkylthio-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub> haloalkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkylthio-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>1</sub>-C<sub>4</sub>-haloalkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl in each case with 1 to 5 halogen atoms, or phenyl,

or

A stands for the group of the formula (A2)



(A2), in which

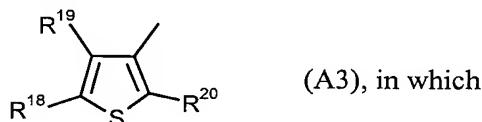
$R^{15}$  and  $R^{16}$  stand independently of one another for hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

$R^{17}$  stands for halogen, cyano or C<sub>1</sub>-C<sub>4</sub> alkyl, or C<sub>1</sub>-C<sub>4</sub> haloalkyl or C<sub>1</sub>-C<sub>4</sub> haloalkoxy with 1 to 5 halogen atoms in each case,

5

or

A stands for the group of the formula (A3)



$R^{18}$  and  $R^{19}$  stand independently of one another for hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

10

$R^{20}$  stands for hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

or

A stands for the group of the formula (A4)



15

$R^{21}$  stands for hydrogen, halogen, hydroxy, cyano, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>4</sub> haloalkyl, C<sub>1</sub>-C<sub>4</sub> haloalkoxy or C<sub>1</sub>-C<sub>4</sub> haloalkylthio in each case with 1 to 5 halogen atoms,

or

A stands for the group of the formula (A5)



20

$R^{22}$  stands for halogen, hydroxy, cyano, C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>1</sub>-C<sub>4</sub> alkylthio, C<sub>1</sub>-C<sub>4</sub> haloalkyl, C<sub>1</sub>-C<sub>4</sub> haloalkylthio or C<sub>1</sub>-C<sub>4</sub> haloalkoxy in each case with 1 to 5 halogen atoms,

25

$R^{23}$  stands for hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>1</sub>-C<sub>4</sub> alkylthio, C<sub>1</sub>-C<sub>4</sub> haloalkyl, C<sub>1</sub>-C<sub>4</sub> haloalkoxy in each case with 1 to 5 halogen atoms, C<sub>1</sub>-C<sub>4</sub> alkylsulfinyl or C<sub>1</sub>-C<sub>4</sub> alkylsulfonyl,

or

A stands for the group of the formula (A6)



R<sup>24</sup> stands for C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

R<sup>25</sup> stands for C<sub>1</sub>-C<sub>4</sub> alkyl,

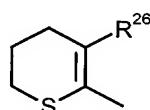
Q<sup>1</sup> stands for S (sulfur), O (oxygen), SO, SO<sub>2</sub> or CH<sub>2</sub>,

p stands for 0, 1 or 2, whereby R<sup>25</sup> stands for identical or various groups if p is 2,

5

or

A stands for the group of the formula (A7)



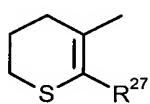
(A7), in which

R<sup>26</sup> stands for C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

10

or

A stands for the group of the formula (A8)



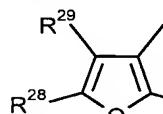
(A8), in which

R<sup>27</sup> stands for C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

or

15

A stands for the group of the formula (A9)



(A9), in which

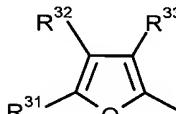
R<sup>28</sup> and R<sup>29</sup> stand independently of one another for hydrogen, halogen, amino, C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

R<sup>30</sup> stands for hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

20

or

A stands for the group of the formula (A10)



(A10), in which

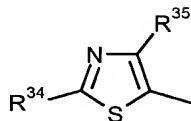
R<sup>31</sup> and R<sup>32</sup> stand independently of one another for hydrogen, halogen, amino, nitro, C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

25

R<sup>33</sup> stands for hydrogen, halogen, C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

or

A stands for the group of the formula (A11)



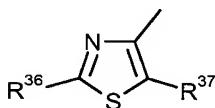
(A11), in which

R<sup>34</sup> stands for hydrogen, halogen, amino, C<sub>1</sub>-C<sub>4</sub> alkylamino, di-(C<sub>1</sub>-C<sub>4</sub> alkyl)amino, cyano, C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

5 R<sup>35</sup> stands for halogen, C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

or

A stands for the group of the formula (A12)



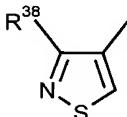
(A12), in which

10 R<sup>36</sup> stands for hydrogen, halogen, amino, C<sub>1</sub>-C<sub>4</sub> alkylamino, di-(C<sub>1</sub>-C<sub>4</sub> alkyl)amino, cyano, C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

R<sup>37</sup> stands for halogen, C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

15 or

A stands for the group of the formula (A13)

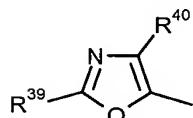


(A13), in which

R<sup>38</sup> stands for halogen, C<sub>1</sub>-C<sub>4</sub> alkyl or C<sub>1</sub>-C<sub>4</sub> haloalkyl with 1 to 5 halogen atoms,

20 or

A stands for the group of the formula (A14)



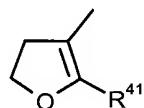
(A14), in which

R<sup>39</sup> stands for hydrogen or C<sub>1</sub>-C<sub>4</sub> alkyl,

R<sup>40</sup> stands for halogen or C<sub>1</sub>-C<sub>4</sub> alkyl,

25 or

A stands for the group of the formula (A15)

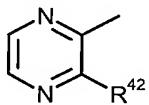


(A15), in which

R&lt;sup&gt;41&lt;/sup&gt; stands for C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; alkyl or C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; haloalkyl with 1 to 5 halogen atoms,

or

A stands for the group of the formula (A16)



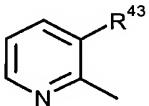
(A16), in which

5

R&lt;sup&gt;42&lt;/sup&gt; stands for hydrogen, halogen, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; alkyl or C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; haloalkyl with 1 to 5 halogen atoms,

or

A stands for the group of the formula (A17)



(A17), in which

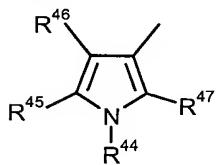
10

R&lt;sup&gt;43&lt;/sup&gt; stands for halogen, hydroxy, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; alkyl, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; alkoxy, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; alkylthio, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; haloalkyl, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; haloalkylthio or C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; haloalkoxy with 1 to 5 halogen atoms in each case,

or

15

A stands for the group of the formula (A18)



(A18), in which

20

R&lt;sup&gt;44&lt;/sup&gt; stands for hydrogen, cyano, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; alkyl, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; haloalkyl with 1 to 5 halogen atoms, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt;-alkoxy-C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; alkyl, hydroxy-C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; alkyl, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; alkylsulfonyl, di(C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; alkyl)aminosulfonyl, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;6&lt;/sub&gt; alkylcarbonyl or in each case possibly substituted phenylsulfonyl or benzoyl,

R&lt;sup&gt;45&lt;/sup&gt; stands for hydrogen, halogen, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; alkyl or C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; haloalkyl with 1 to 5 halogen atoms,

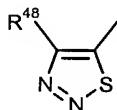
R&lt;sup&gt;46&lt;/sup&gt; stands for hydrogen, halogen, cyano, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; alkyl or C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; haloalkyl with 1 to 5 halogen atoms,

25

R&lt;sup&gt;47&lt;/sup&gt; stands for hydrogen, halogen, C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; alkyl or C&lt;sub&gt;1&lt;/sub&gt;-C&lt;sub&gt;4&lt;/sub&gt; haloalkyl with 1 to 5 halogen atoms,

or

A stands for the group of the formula (A19)



(A19), in which

 $\text{R}^{48}$  stands for  $\text{C}_1\text{-}\text{C}_4$  alkyl.

## 2. Haloalkyl carboxamides of the formula (I) according to Claim 1, in which

5       $\text{R}$  stands for hydrogen, fluorine, chlorine or bromine,

10      $\text{R}^1$  stands for hydrogen or methyl,

15      $\text{R}^2$  stands for methyl, ethyl or in each case for methyl, ethyl, n- or isopropyl, n-, iso-, sec or tert-butyl with single or multiple, the same or various, substitution by fluorine, chlorine or bromine.

20      $\text{R}^3$  stands for fluorine, chlorine, bromine, iodine or in each case for methyl, ethyl, n- or isopropyl, n-, iso-, sec or tert-butyl with single or multiple, the same or various, substitution by fluorine, chlorine or bromine.

25      $\text{R}^4$  stands for hydrogen,  $\text{C}_1\text{-}\text{C}_4$  alkyl,  $\text{C}_1\text{-}\text{C}_4$  alkylsulfinyl,  $\text{C}_1\text{-}\text{C}_4$  alkylsulfonyl,  $\text{C}_1\text{-}\text{C}_4$ -alkoxy- $\text{C}_1\text{-}\text{C}_4$ -alkyl,  $\text{C}_3\text{-}\text{C}_6$  cycloalkyl;  $\text{C}_1\text{-}\text{C}_4$  haloalkyl,  $\text{C}_1\text{-}\text{C}_4$  haloalkylthio,  $\text{C}_1\text{-}\text{C}_4$  haloalkylsulfinyl,  $\text{C}_1\text{-}\text{C}_4$  haloalkylsulfonyl, halo- $\text{C}_1\text{-}\text{C}_3$ -alkoxy- $\text{C}_1\text{-}\text{C}_3$ -alkyl,  $\text{C}_3\text{-}\text{C}_8$  halocycloalkyl with 1 to 9 fluorine, chlorine and/or bromine atoms in each case; formyl, formyl- $\text{C}_1\text{-}\text{C}_3$ -alkyl, ( $\text{C}_1\text{-}\text{C}_3$  alkyl)carbonyl- $\text{C}_1\text{-}\text{C}_3$ -alkyl, ( $\text{C}_1\text{-}\text{C}_3$  alkoxy)carbonyl- $\text{C}_1\text{-}\text{C}_3$ -alkyl; halo-( $\text{C}_1\text{-}\text{C}_3$  alkyl)carbonyl- $\text{C}_1\text{-}\text{C}_3$ -alkyl, halo-( $\text{C}_1\text{-}\text{C}_3$  alkoxy)carbonyl- $\text{C}_1\text{-}\text{C}_3$ -alkyl with 1 to 13 fluorine, chlorine and/or bromine atoms in each case;

30     ( $\text{C}_1\text{-}\text{C}_6$  alkyl)carbonyl, ( $\text{C}_1\text{-}\text{C}_4$  alkoxy)carbonyl, ( $\text{C}_1\text{-}\text{C}_3$ -alkoxy- $\text{C}_1\text{-}\text{C}_3$ -alkyl)carbonyl, ( $\text{C}_3\text{-}\text{C}_6$  cycloalkyl)carbonyl; ( $\text{C}_1\text{-}\text{C}_4$  haloalkyl)carbonyl, ( $\text{C}_1\text{-}\text{C}_4$  haloalkoxy)carbonyl, (halo- $\text{C}_1\text{-}\text{C}_3$ -alkoxy- $\text{C}_1\text{-}\text{C}_3$ -alkyl)carbonyl, ( $\text{C}_3\text{-}\text{C}_6$  halocycloalkyl)carbonyl with 1 to 9 fluorine, chlorine and/or bromine atoms in each case; or  $-\text{C}(=\text{O})\text{C}(=\text{O})\text{R}^5$ ,  $-\text{CONR}^6\text{R}^7$  or  $-\text{CH}_2\text{NR}^8\text{R}^9$ ,

35      $\text{R}^5$  stands for hydrogen,  $\text{C}_1\text{-}\text{C}_6$  alkyl,  $\text{C}_1\text{-}\text{C}_4$  alkoxy,  $\text{C}_1\text{-}\text{C}_3$ -alkoxy- $\text{C}_1\text{-}\text{C}_3$ -alkyl,  $\text{C}_3\text{-}\text{C}_6$  cycloalkyl;  $\text{C}_1\text{-}\text{C}_4$  haloalkyl,  $\text{C}_1\text{-}\text{C}_4$  haloalkoxy, halo- $\text{C}_1\text{-}\text{C}_3$ -alkoxy- $\text{C}_1\text{-}\text{C}_3$ -alkyl,  $\text{C}_3\text{-}\text{C}_6$  halocycloalkyl with 1 to 9 fluorine, chlorine and/or bromine atoms in each case,  $\text{R}^6$  and  $\text{R}^7$  stand independently of one another in each case for hydrogen,  $\text{C}_1\text{-}\text{C}_6$  alkyl,  $\text{C}_1\text{-}\text{C}_3$ -alkoxy- $\text{C}_1\text{-}\text{C}_3$ -alkyl,  $\text{C}_3\text{-}\text{C}_6$  cycloalkyl;  $\text{C}_1\text{-}\text{C}_4$  haloalkyl, halo- $\text{C}_1\text{-}\text{C}_3$ -alkoxy- $\text{C}_1\text{-}\text{C}_3$ -alkyl,  $\text{C}_3\text{-}\text{C}_6$  halocycloalkyl with 1 to 9 fluorine, chlorine and/or bromine atoms in each case,

40      $\text{R}^6$  and  $\text{R}^7$ , moreover, form a substituted, saturated heterocycle with 5 to 8 ring atoms together with the nitrogen atom to which they are bound, with single or multiple, the same or various substitution by halogen or  $\text{C}_1\text{-}\text{C}_4$  alkyl, whereby the

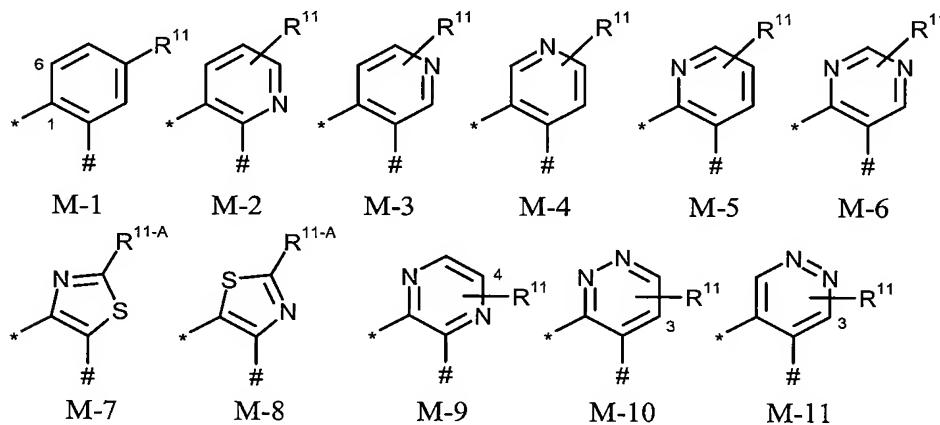
heterocycle can contain 1 or 2 additional, non-adjacent hetero atoms constituted by oxygen, sulfur or NR<sup>10</sup>,

R<sup>8</sup> and R<sup>9</sup> stand independently of one another for hydrogen, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>3</sub>-C<sub>6</sub> cycloalkyl; C<sub>1</sub>-C<sub>4</sub> haloalkyl, C<sub>3</sub>-C<sub>6</sub> halocycloalkyl with 1 to 9 fluorine, chlorine and/or bromine atoms in each case,

R<sup>8</sup> and R<sup>9</sup>, moreover, form a substituted, saturated heterocycle with 5 to 8 ring atoms together with the nitrogen atom to which they are bound, with single or multiple, the same or various substitution by halogen or C<sub>1</sub>-C<sub>4</sub> alkyl, whereby the heterocycle can contain 1 or 2 additional, non-adjacent hetero atoms constituted by oxygen, sulfur or NR<sup>10</sup>,

R<sup>10</sup> stands for hydrogen or C<sub>1</sub>-C<sub>4</sub> alkyl,

M stands for one of the following cyclics



whereby the bond marked with an asterisk ("\*") is a link with the amide, and the bond marked with "#" is a link with the haloalkyl group,

R<sup>11</sup> stands for hydrogen, fluorine, chlorine, methyl or trifluoromethyl,

R<sup>11-A</sup> stands for hydrogen, methyl or trifluoromethyl,

A stands for the group of the formula (A1)



R<sup>12</sup> stands for hydrogen, cyano, fluorine, chlorine, bromine, iodine, methyl, ethyl, isopropyl, methoxy, ethoxy, methylthio, ethylthio, cyclopropyl, C<sub>1</sub>-C<sub>2</sub> haloalkyl, C<sub>1</sub>-C<sub>2</sub> haloalkoxy in each case with 1 to 5 fluorine, chlorine and/or bromine atoms, trifluoromethylthio, difluoromethylthio, aminocarbonyl, aminocarbonylmethyl or aminocarbonylethyl,

R<sup>13</sup> stands for hydrogen, fluorine, chlorine, bromine, iodine, methyl, ethyl, methoxy, ethoxy, methylthio or ethylthio,

R<sup>14</sup> stands for hydrogen, methyl, ethyl, n-propyl, isopropyl, C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms, hydroxymethyl, hydroxyethyl, cyclopropyl, cyclopentyl, cyclohexyl or phenyl,

5

or

A stands for the group of the formula (A2)



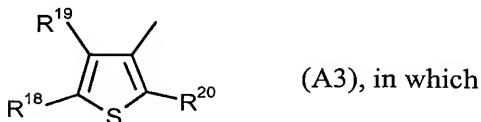
R<sup>15</sup> and R<sup>16</sup> stand independently of one another for hydrogen, fluorine, chlorine, bromine, methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

R<sup>17</sup> stands for fluorine, chlorine, bromine, cyano, methyl, ethyl, C<sub>1</sub>-C<sub>2</sub> haloalkyl or C<sub>1</sub>-C<sub>2</sub> haloalkoxy in each case with 1 to 5 fluorine, chlorine and/or bromine atoms,

15

or

A stands for the group of the formula (A3)



R<sup>18</sup> and R<sup>19</sup> stand independently of one another for hydrogen, fluorine, chlorine, bromine, methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

20 R<sup>20</sup> stands for hydrogen, fluorine, chlorine, bromine, methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

or

A stands for the group of the formula (A4)



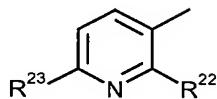
25

R<sup>21</sup> stands for hydrogen, fluorine, chlorine, bromine, iodine, hydroxy, cyano, C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>1</sub>-C<sub>2</sub> haloalkyl, C<sub>1</sub>-C<sub>2</sub> haloalkoxy or C<sub>1</sub>-C<sub>2</sub> haloalkylthio in each case with 1 to 5 fluorine, chlorine and/or bromine atoms,

or

30

A stands for the group of the formula (A5)



(A5), in which

R<sup>22</sup> stands for fluorine, chlorine, bromine, iodine, hydroxy, cyano, C<sub>1</sub>-C<sub>4</sub> alkyl, methoxy, ethoxy, methylthio, ethylthio, difluoromethylthio, trifluoromethylthio, C<sub>1</sub>-C<sub>2</sub> haloalkyl or C<sub>1</sub>-C<sub>2</sub> haloalkoxy in each case with 1 to 5 fluorine, chlorine and/or bromine atoms,

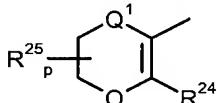
5

R<sup>23</sup> stands for hydrogen, fluorine, chlorine, bromine, iodine, cyano, C<sub>1</sub>-C<sub>4</sub> alkyl, methoxy, ethoxy, methylthio, ethylthio, C<sub>1</sub>-C<sub>2</sub> haloalkyl or C<sub>1</sub>-C<sub>2</sub> haloalkoxy in each case with 1 to 5 fluorine, chlorine and/or bromine atoms, C<sub>1</sub>-C<sub>2</sub> alkylsulfinyl or C<sub>1</sub>-C<sub>2</sub> alkylsulfonyl,

10

or

A stands for the group of the formula (A6)



(A6), in which

R<sup>24</sup> stands for methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

15

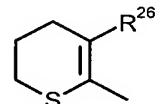
R<sup>25</sup> stands for methyl or ethyl,

Q<sup>1</sup> stands for S (sulfur), SO<sub>2</sub> or CH<sub>2</sub>,

p stands for 0 or 1,

or

A stands for the group of the formula (A7)



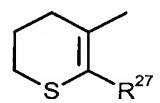
(A7), in which

20

R<sup>26</sup> stands for methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

or

A stands for the group of the formula (A8)



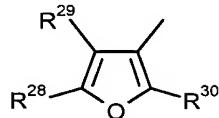
(A8), in which

25

R<sup>27</sup> stands for methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

or

A stands for the group of the formula (A9)



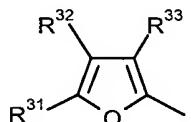
(A9), in which

R<sup>28</sup> and R<sup>29</sup> stand independently of one another for hydrogen, fluorine, chlorine, bromine, amino, methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

5 R<sup>30</sup> stands for hydrogen, fluorine, chlorine, bromine, iodine, methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

or

A stands for the group of the formula (A10)



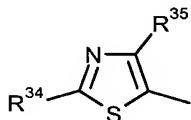
(A10), in which

10 R<sup>31</sup> and R<sup>32</sup> stand independently of one another for hydrogen, fluorine, chlorine, bromine, amino, nitro, methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

R<sup>33</sup> stands for hydrogen, fluorine, chlorine, bromine, iodine, methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

15 or

A stands for the group of the formula (A11)



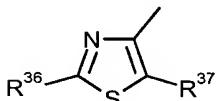
(A11), in which

R<sup>34</sup> stands for hydrogen, fluorine, chlorine, bromine, amino, C<sub>1</sub>-C<sub>4</sub> alkylamino, di(C<sub>1</sub>-C<sub>4</sub> alkyl)amino, cyano, methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

20 R<sup>35</sup> stands for fluorine, chlorine, bromine, methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

or

A stands for the group of the formula (A12)



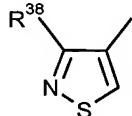
(A12), in which

25 R<sup>36</sup> stands for hydrogen, fluorine, chlorine, bromine, amino, C<sub>1</sub>-C<sub>4</sub> alkylamino, di(C<sub>1</sub>-C<sub>4</sub> alkyl)amino, cyano, methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

$R^{37}$  stands for fluorine, chlorine, bromine, methyl, ethyl or  $C_1-C_2$  haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

or

A stands for the group of the formula (A13)



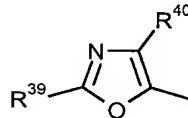
(A13), in which

5

$R^{38}$  stands for fluorine, chlorine, bromine, methyl, ethyl or  $C_1-C_2$  haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

or

A stands for the group of the formula (A14)



(A14), in which

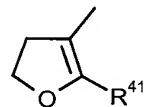
10

$R^{39}$  stands for hydrogen, methyl or ethyl,

$R^{40}$  stands for fluorine, chlorine, bromine, methyl or ethyl,

or

A stands for the group of the formula (A15)



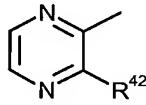
(A15), in which

15

$R^{41}$  stands for methyl, ethyl or  $C_1-C_2$  haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

or

A stands for the group of the formula (A16)



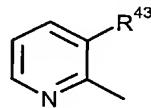
(A16), in which

20

$R^{42}$  stands for hydrogen, fluorine, chlorine, bromine, methyl, ethyl or  $C_1-C_2$  haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

or

A stands for the group of the formula (A17)



(A17), in which

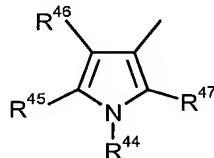
25

$R^{43}$  stands for fluorine, chlorine, bromine, iodine, hydroxy,  $C_1-C_4$  alkyl, methoxy, ethoxy, methylthio, ethylthio, difluoromethylthio,

trifluoromethylthio, C<sub>1</sub>-C<sub>2</sub> haloalkyl or C<sub>1</sub>-C<sub>2</sub> haloalkoxy in each case with 1 to 5 fluorine, chlorine and/or bromine atoms,

or

A stands for the group of the formula (A18)



(A18), in which

5

R<sup>44</sup> stands for hydrogen, methyl, ethyl, C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms, C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl, hydroxymethyl, hydroxyethyl, methylsulfonyl or dimethylaminosulfonyl,

10

R<sup>45</sup> stands for hydrogen, fluorine, chlorine, bromine, methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

15

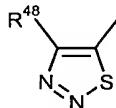
R<sup>46</sup> stands for hydrogen, fluorine, chlorine, bromine, iodine, cyano, methyl, ethyl, isopropyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

15

R<sup>47</sup> stands for hydrogen, fluorine, chlorine, bromine, methyl, ethyl or C<sub>1</sub>-C<sub>2</sub> haloalkyl with 1 to 5 fluorine, chlorine and/or bromine atoms,

or

A stands for the group of the formula (A19)



(A19), in which

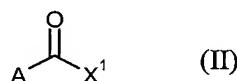
20

R<sup>48</sup> stands for methyl, ethyl, n-propyl or isopropyl.

3.

A process for synthesizing haloalkyl carboxamides of the formula (I) according to Claim 1, characterized in that

a) carboxylic acid derivatives the formula (II)



(II)

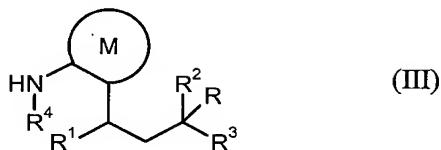
25

in which

A has the meanings specified in Claim 1 and

X<sup>1</sup> stands for halogen or hydroxy,

are reacted with aniline derivatives of the formula (III)



in which

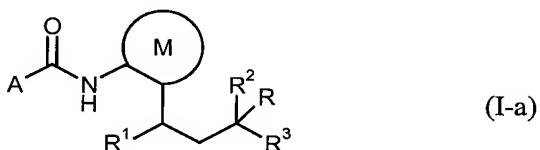
R, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> and M have the meanings specified in Claim 1,

possibly in the presence of a catalyst, possibly in the presence a condensation agent, possibly in the presence of an acid binder and possibly in the presence of a diluent,

5

or

b) hexylcarboxanilides of the formula (I-a)



10

in which

R, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, M and A have the meanings specified in Claim 1,

are reacted with halides of the formula (IV)



in which

15

X<sup>2</sup> stands for chlorine, bromine or iodine,

R<sup>4-A</sup> stands for C<sub>1</sub>-C<sub>8</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkylsulfinyl, C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl, C<sub>1</sub>-C<sub>4</sub> alkoxy . C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>3</sub>-C<sub>8</sub> cycloalkyl; C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>4</sub> haloalkylthio, C<sub>1</sub>-C<sub>4</sub> haloalkylsulfinyl, C<sub>1</sub>-C<sub>4</sub> haloalkylsulfonyl, halo-C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl, C<sub>3</sub>-C<sub>8</sub> halocycloalkyl with 1 to 9 fluorine, chlorine and/or bromine atoms in each case; formyl, formyl-C<sub>1</sub>-C<sub>3</sub>-alkyl, (C<sub>1</sub>-C<sub>3</sub> alkyl)carbonyl-C<sub>1</sub>-C<sub>3</sub>-alkyl, (C<sub>1</sub>-C<sub>3</sub> alkoxy)carbonyl-C<sub>1</sub>-C<sub>3</sub>-alkyl; halo-(C<sub>1</sub>-C<sub>3</sub> alkyl)carbonyl-C<sub>1</sub>-C<sub>3</sub>-alkyl, halo-(C<sub>1</sub>-C<sub>3</sub> alkoxy)carbonyl-C<sub>1</sub>-C<sub>3</sub>-alkyl with 1 to 13 fluorine, chlorine and/or bromine atoms in each case;

20

(C<sub>1</sub>-C<sub>8</sub> alkyl)carbonyl, (C<sub>1</sub>-C<sub>8</sub> alkoxy)carbonyl, (C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl)carbonyl, (C<sub>3</sub>-C<sub>8</sub> cycloalkyl)carbonyl; (C<sub>1</sub>-C<sub>6</sub> haloalkyl)carbonyl,

(C<sub>1</sub>-C<sub>6</sub> haloalkoxy)carbonyl, (halo-C<sub>1</sub>-C<sub>4</sub>-alkoxy-C<sub>1</sub>-C<sub>4</sub>-alkyl)carbonyl, (C<sub>3</sub>-C<sub>8</sub> halocycloalkyl)carbonyl with 1 to 9 fluorine, chlorine and/or bromine atoms in each case; or -C(=O)C(=O)R<sup>5</sup>, -CONR<sup>6</sup>R<sup>7</sup> or -CH<sub>2</sub>NR<sup>8</sup>R<sup>9</sup>,

whereby R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup> and R<sup>9</sup> have the meanings specified in Claim 1,

25

30

in the presence of a base and in the presence of a dilution medium.

4. Media for combating undesirable microorganisms, characterized by containing at least one haloalkyl carboxamide of the formula (I) according to Claim 1 together with extenders and/or surface-active materials.

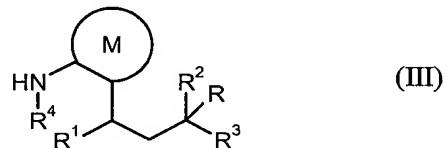
5 5. The use of haloalkyl carboxamides of the formula (I) according to Claim 1 to combat undesirable microorganisms.

6. Processes for combating undesired microorganisms, characterized in that haloalkyl carboxamides of the formula (I) are applied to the microorganisms and/or their  
10 environment in accordance with Claim 1.

7. Processes for synthesizing materials to combat undesired microorganisms, characterized in that haloalkyl carboxamides of the formula (I) are mixed with extenders and/or surface-active materials according to Claim 1.

15

8. Aniline derivatives of the formula (III)



in which R, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> and M have the meanings specified in Claim 1.